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MANUFACTURE OF LITHIUM SECONDARY BATTERY POSITIVE ELECTRODE

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ABSTRACT

PURPOSE: To manufacture a lithium secondary battery positive electrode with high film-adhesion property and excellent characteristic of battery by forming a metal oxide film containing lithium on an electrode substrate by jointly using vapor deposition of a lithium containing material and ion beam irradiation.

CONSTITUTION: A lithium-containing material is vaporized from a vaporizing source 3 inside a vacuum chamber 1 having an exhaust device 7, and a vaporized material 3a is vapor-deposited on an electrode substrate S mounted on a base holder 2. At the same time, ion beams are irradiated on the substrate S from an ion source 4. A lithium-containing metal oxide film is formed on the substrate S. As the lithium-containing metal oxide, LiMn(sub 2)O(sub 4), LiWO(sub 3), LiCoO(sub 2), LiNiCoO, and LiV(sub 2)O(sub 5) are used. This ion beam is preferably formed by using an inert gas or an oxygen gas as a raw gas, and an accelerating energy of 100eV-500KeV. By using the lithium-containing metal oxide film as the positive electrode of a lithium secondary battery, the mobility of a lithium ion on the inside hardly drops and desirable battery characteristics is easily obtained.